MEMORANDUM

To: James J. Murphy, Hugh Williams, Carter Ficklen, Mary Jo Bailey

From: Christoph W. Leemann

Date: January 31, 2003

Subject: 2002 Review of the JLab ISMS

Thank you for your review of Jefferson Lab's ISM System. We concur with your findings and agree in principle with your recommendations. We intend to act on those recommendations as follows:

Recommendations: Respond to all recommendations within 2 weeks.
Complete corrective actions on time.

Comment: These two recommendations will be addressed together. Jefferson Lab will develop an integrated lab-wide tracking system to ensure that deficiencies and problems from whatever source are addressed promptly and tracked to completion. The initial focus will be on safety related problems. The system will facilitate assignment of ownership by the appropriate management level, prioritization, and status reporting.

Recommendation: Raise the visibility of Safety at Jefferson Lab.

Comment: Two initiatives will be undertaken in this area: (1) We will develop four or five simple graphic measures of our safety record (*e.g.*, number of days without a lost or restricted workday, number of reportable injuries, *etc.*) suitable for display both on the web and in work areas. (2) The Director's visits to work spaces with EH&S inspectors will be featured regularly in the *On Target* staff magazine.

Recommendation: Make better use of EH&S inspection results.

Comment: The EH&S Officers of each divisions will submit semiannual analyses of their EH&S inspection results to the Director for inclusion in his monthly safety letter to Dr. Ray Orbach, DOE Office of Science.

Recommendation: Improve the ability of subject matter experts to contribute to safety at Jefferson Lab.

Comment: Three initiatives will be undertaken in this area: (1) Supervisors of all staff with EH&S responsibilities (EH&S Manual chapter authors, EH&S committee members, safety wardens, *etc.*) will include in the performance expectations of those staff objectives that reflect their EH&S responsibilities. (2) EH&S subcommittee charters will be amended to encourage the subcommittees to act proactively. (3) All EH&S subcommittees will be invited to report annually to Director's Council on their accomplishments.

Review of the Jefferson Lab Integrated Safety Management System 2002

James J. Murphy
Carter Ficklen
Hugh Williams
Mary Jo Bailey

Executive Summary

What Was Done

A wide range of documentation, supplemented by interviews, was reviewed to determine first if Jefferson Lab (JLab) has defined an appropriate Integrated Safety Management System (ISMS) and second how well that system is actually functioning.

Findings

It was found that JLab has a well-defined ISMS. In fact, safety has been integrated into work activities at JLab from the Lab's very beginnings, years before DOE formally required Integrated Safety Management (ISM). In most cases the Lab's system works well, but there is evidence that recently the system is not consistently producing the results expected.

It was also found that recommendations and findings from assessments, reviews, and inspections are not consistently pursued and so opportunities for improvement are lost.

Recommendations

This report makes five major recommendations. Four address feedback and continuous improvement; the fifth, balanced priorities.

- Respond to all recommendations (not just those in this report) within two weeks
- Complete corrective actions on time
- Raise the visibility of safety at JLab
- Make better use of EH&S inspection results
- Improve the ability of subject matter experts to contribute to safety at JLab

The discussion of these recommendations in Section 5 includes both the rationale for the recommendations and specific actions for implementation.

Table of Contents

Section 1 - Introduction

JLab has been justifiably proud of its strong EH&S program, but there is evidence that the Lab's safety performance is not as strong as it was. Although JLab's EH&S performance continues to earn an overall rating of "outstanding," its occupational injury cost index and lost work day case rate are worse than they were - both absolutely and in relationship to those metrics at other DOE labs.

Because of his concerns about the trend in the Lab's safety performance and in response to a recommendation from the Site Office, JLab's Director charged the Office of Technical Performance (OTP) to review the Lab's Integrated Safety Management System.

Purpose

This review of ISMS at JLab was designed to answer two questions:

1. Does JLab have in place an appropriate ISMS
2. How well is that ISMS actually operating

In addition, it was expected that in situations where the system is not operating as well as it might the review would identify opportunities for improvement.

Methodology

A wealth of documentation elucidates JLab's ISMS program and operation. The Lab's ISMS Plan and EH&S Manual define the system; assessments at various organizational levels look at the implementation of EH&S; and, accident/incident reports reveal problems. These and other documents from 2000 through the first half of 2002 were examined by OTP to evaluate JLab's ISMS and its operation. When appropriate, interviews were used to supplement this documentation.

The Seven Guiding Principles and Five Core Functions of ISMS form the framework for reporting the results of this review. For each principle and function we tried to establish both how JLab's ISMS seeks to implement it and then how well the implementation is functioning.

Section 2 - Program Definition

History

Since Thomas Jefferson National Accelerator Facility (JLab) first became a Federally Funded Research and Development Center in FY1984, the philosophy of laboratory management has been that in order to be effective environment, safety, and health considerations must be integral to all work. The commitment was to "doing it right, and safely, the first time." This philosophy has been institutionalized and continuously improved.

The Lab's approach has been recognized as a best practice by industry and was established as a DOE Acquisition Regulation on June 27, 1997. The similarity between the acquisition regulation, which was incorporated into the SURA/DOE Contract in April 1998, and JLab's existing system was so extensive that only four changes were needed for compliance: One involved augmentation of the information reporting system, one was the writing of an ISMS Plan, and two dealt with flowdown of the new requirement to subcontracts.

In May 1999 DOE verified the Lab's ISMS Plan, concluding that:

- The ISMS components existed and could function in accordance with the seven guiding principles and five core functions of the DOE Safety Management System Policy,
- There was appropriate tailoring of applicable regulatory and contractual requirements for doing work safely and protecting the public and the environment, and
- The ISMS, as described, should be able to successfully meet the expectations of DOE policy and guidance.

In November 1999 DOE validated JLab's ISMS and found that ISMS had been effectively implemented at JLab at the line manager and worker levels.

During both the verification and validation processes a number of opportunities for improvement were identified. Most, but not all, of these improvements have been accomplished.

ISMS Plan

Revision 0 of the TJNAF Integrated Safety Management System Plan was issued on September 5, 1997. It has been reviewed annually and revised five times since. Revision 2 was submitted to DOE for approval on April 28, 1998. The most recent version, Revision 5, was issued on September 30, 2001.

The JLab ISMS Plan is a roadmap between DOE's requirements for an ISMS, and the documents and other methods the Lab uses to meet these requirements. Review of the ISMS Plan confirms that JLab has defined an ISMS that satisfies DOE's requirements. The ISMS Plan and the JLab EH&S Manual establish an ISMS that, when followed assiduously, produce a safe and healthful workplace.

EH&S Manual

Central to safety at JLab is the Lab's EH&S Manual. It lays out the Lab's philosophy about safety in very clear terms:

> *Jefferson Lab is committed to being a safe and healthful research laboratory.*
>
> *Jefferson Lab is committed to preserving the natural environment and conducting our operations without adverse impact on the surrounding community.*
>
> *These commitments include adherence to applicable laws, regulations, and standards.*

Safety, health, and environmental protection considerations are intrinsic to all work at Jefferson Lab and are essential to Jefferson Lab's overall scientific progress, productivity, and cost effectiveness. Thus, each individual must establish knowledge and control of the hazards and consequences of all work for which he or she is responsible. In addition, everyone has the right and responsibility to remedy or to report--without fear of reprisal--any practice, situation, or action that endangers people or the environment. These tenets are key ingredients of acceptable individual behavior and responsible management at Jefferson Lab.

No activity is so urgent or important that our standards for safety, health, or environmental protection may be compromised.

The EH&S Manual provides clear and uniform guidance to JLab staff, contractors, users, and visitors, enabling them to effectively implement sound work practices in support of Jefferson Lab's mission.

For clarity and consistency, the EH&S Manual is comprehensive. The Manual contains both descriptions of established EH&S programs and the appropriate job-related guidance and procedures commonly needed to implement work practices that are sound with respect to safety, health, and environmental concerns.

Jefferson Laboratory Self-Assessment Program (JLSAP)

The JLab Self-Assessment Program (JLSAP) is designed to provide Lab management with information on the state of the Laboratory including EH&S. It is a critical part of the feedback and improvement loop (ISMS Core Function 5).

JLab's self-assessment program was established in January 1993 and has undergone six revisions. In September 1996, the Lab Director announced that the importance of self-assessments performed by the line organizations would be increased substantially to ensure line management "ownership" of self-assessments and their results. Line Self-Assessments (LSA), in order to provide valuable insight and information to the performing manager, senior management, and the Director, must be value-added; balanced; must include an integrated, contextual view of EH&S; and, must meet negotiated DOE expectations. Revision 4 of the JLSAP provided direction for increased emphasis on line management "ownership" and performance assessment. Revision 5 provided additional principles reflecting lessons learned during early LSAs. Revision 6 incorporated further lessons learned and, in particular, sought to strengthen the linkage between LSAs and continuous improvement by focusing attention on corrective action plans.

Self-Assessment at JLab is accomplished by:

- Line Self-Assessment (LSA)
- Independent Self-Assessment (IA)
- Appendix B (Contract) Performance Reporting (includes self-assessment activity)
- Baldrige Self-Assessment

- Individual Self-Assessment
- Division Self-Assessment Activities

The OTP is responsible for providing independent oversight and assessment of laboratory performance. The Self-Assessment and Quality Assurance (SA/QA) Group develops self-assessment policies and procedures for approval by Director's Council; facilitates implementation of these policies; conducts independent assessments; recommends improvement and corrective actions; tracks findings and commitments resulting from independent assessments or lab-wide assessments through corrective action planning, execution, and closure; monitors corrective action effectiveness; and, provides appropriate self-assessment information, advice and training, when requested.

The SA/QA Officer prepares and issues an annual report of the Lab's self-assessment program and activities.

Conclusion

The 1999 DOE verification of the JLab ISMS Plan found no areas of concern and consequently, accepted the Plan as adequate to implement ISMS. This current review confirms that the basis of JLab's ISMS is adequately documented to yield an effective ISMS. Therefore, the introduction of new ISMS programs, or requirements, to the ISMS now in place would not be an effective way to strengthen the Lab's ISMS. Improvements are more likely to come by examining how ISM functions in practice, identifying situations where it breaks down, and address those breakdowns.

Section 3 - Seven Guiding Principles (GP)

Note: There is a certain inherent contradiction in the desire for an *integrated* safety management system and the search for "visible" signs of its functions and principles. The more something is integrated the less visible it becomes. Still, the seven guiding principles and five core functions of ISMS offer a framework from which to judge how well the Lab's ISMS is working.

It was found that the guiding principles of ISMS underpin JLab culture. In what follows we look at each of the principles in turn and easily find examples of how they are applied at JLab. The observations that we note are not intended to be exhaustive; other examples could have been cited. We also note concerns: opportunities for improvement or situations where the principles could be more vigorously applied.

GP #1 - Line Management Responsibility for Safety

Observations

JLab management, from members of the Director's Council to first-line supervisors, recognize and act on their responsibility for safety:

- Concerned by the number of accidents in his Division the Accelerator Associate Director recently chartered a task force "…to identify key processes that impact the safety culture and performance of the Accelerator Division and make recommendations for improving them." One outcome was a reorganization of the Accelerator Division's EH&S staff to strengthen their effectiveness.
- In the Physics Division regular attendance by senior management (Associate Director and/or Deputy Associate Director) at quarterly safety warden meetings has ensured that safety issues are resolved promptly.
- Line managers and staff, not EH&S professionals, form the majority on most JLab EH&S subcommittees (*e.*g., Electrical Safety, Emergency Management, Training, *etc*.).
- Accelerator Division holds safety meetings before major maintenance periods which allow management to focus staff attention on safety issues and procedures just as potentially hazardous work is about to begin.

Concerns

While line management's responsibility for safety is definitely a part of JLab's culture, the commitment is not uniformly strong:

- The quality and timeliness of accident investigations, which are the responsibility of line management assisted by EH&S professionals as needed, are uneven. Some are completed promptly; others are not.
- Day-to-day concern for safety by top management is not always visible. This may lead to the perception that management is concerned with safety only when there is a problem.

GP #2 - Clear Roles and Responsibilities

Observations

Clear roles and responsibilities are set in the JLab EH&S Manual in a variety of ways including:

- Emergency staff are named for each building: Associate Director in Charge, emergency coordinator, safety warden or building manager, plus backups.
- Overall EH&S responsibilities are established for individuals from the Lab's Director through supervisors to all employees and users.
- The typical EH&S Manual chapter addressing a particular hazard includes a section detailing specific, unusual responsibilities related to that hazard.

Concerns

As an early indication to perspective employees of the importance JLab places on safety, the Lab's employment announcements used to contain words such as "perform work in a safe manner in accordance with JLab policy." (general employment), and "create and maintain a safety

culture in…" (management positions) By dropping this wording from these announcements the Lab has lost an opportunity to emphasize safety to all employees from the very beginning. The wording should be returned to the employment announcements.

The responsibility of subject matter experts for maintaining the currency of EH&S Manual chapters for which they are authors may not be as firmly established as it could be. The Manual requires that chapters be reviewed and updated at least every three years, but whether this responsibility is consistently transferred to individual performance objectives is not clear.

The Lab may not be using the expertise existing in the various EH&S subcommittees as effectively as it could. Because most safety issues are handled within the line organizations as is appropriate, the subcommittees are seldom called upon for advice. Would the Lab benefit if the subcommittees acted more proactively in areas like education?

GP #3 - Competence Commensurate with Responsibilities

Observations

JLab staff are highly competent. It is Lab policy to hire only well qualified applicants and training reinforces this competence. Each employee has an Individual Training Plan established by his supervisor and customized to the work the employee does. Much EH&S training (*e.g.* ODH, Radiation Worker I, *etc.*) must be renewed at regularly scheduled intervals. The CANS card system that restricts access based on training record enforces currency of training.

Concerns

Although JLab staff are competent in the areas of their regular responsibilities, there is a danger that when called upon to work outside those areas competence may be lacking. An accident occurred when inexperienced staff mis-assembled scaffolding. This incident demonstrates the need for supervisors to be especially vigilant when unusual work tasks are assigned. Information in the EH&S Manual can be particularly useful in these situations.

GP #4 - Balanced Priorities

Observations

Balancing resources between program and safety is a continuing challenge in a resource-constrained environment. There is evidence that JLab succeeds in this balancing. In Physics the Safety Wardens each have a budget for small safety needs. JLab has Lab-funded safety shoe and safety glasses programs to ensure employees needing this personal protective equipment have it. There is no evidence that schedule pressures are leading to shortcuts that lessen safety. The Institute for SRF Technology, because of its tight schedule for highly visible SNS work, is one part of the Lab that might be especially exposed to schedule pressures. But to counter this, new management at the Institute is emphasizing safety, aiming at a "high expectation safety culture."

Concerns

Because JLab is a relatively small laboratory with a budget that has not kept up with inflation in recent years, staff is stretched thin and in many important areas expertise is one deep. This is a vulnerability. Cross training is part of the answer, but in very specialized areas (*e.g.*, hoists and rigging) management must take special care to ensure that the limited expertise is applied when needed.

GP #5 - Identification of Safety Standards and Requirements

Observations

JLab uses the Work Smart Standards (WSS) process to identify safety standards applicable to hazards at JLab. The EH&S Manual then provides clear and uniform safety guidance to JLab staff, users, contractors, and visitors based on the standards identified in the WSS set.

It is important to understand that the WSS process is a continuing one, both because standards and laws change, and because new hazards are identified as work progresses. As an example, the hazards related to high static magnetic fields were not identified as relevant to JLab in the original round of the WSS process, but high static magnetic fields have been added to the WSS set and the EH&S Manual now offers guidance in dealing with these hazards.

Concerns

While safety standards and requirements applicable at JLab are well defined, in several accidents at the Lab the relevant standards and requirements were not identified or applied. (*e.g.*, the mis-assembly of scaffolding mentioned earlier, failure to use personal protective equipment when working with hazardous chemicals, failure to use safety glasses when soldering, *etc*.). Awareness by management and staff of the need for constant attention to safety can reduce the chance that failure to identify a safety requirement will lead to an injury.

GP #6 - Hazard Controls Tailored to Work Being Performed

Observations

JLab uses a variety of work control documents to tailor hazard controls to the work being performed. Operational Safety Procedures; Standard Operating Procedures; Temporary Operational Safety Procedures; Confined-Space, Electrical Service, Fire Hazard, and Radiological Work Permits are used effectively to anticipate the hazard involved in the work being performed.

Concerns

For work control documents to serve their intended purpose it is important that the right people be involved in creating the documents. In most cases this would include the staff who will be

involved in the work. It is also essential that the work control document be seen and read by all staff that are affected. There have been situations when these conditions were not met.

GP #7 - Operations Authorization

Observations

The experimental review process in place for experiments in the three halls and the similar system in place for FEL experiments ensures that EH&S concerns receive the highest consideration before experiments take place. The experimental review process reflects the degree to which new apparatus is used. It includes a Conduct of Operations document, a Radiation Safety Assessment Document, and an Experiment Safety Assessment Document. Each experiment is then reviewed by a number of committees at various stages of preparation and is authorized to operate only after the Associate Director of Physics issues an Experimental Readiness Clearance. This process is an excellent example of authorizing operations only after safety issues have been thoroughly addressed

Concerns

Although operations authorization is routine "inside the fence," this principle is not as consistently and uniformly applied elsewhere on site. The "just do it" mind set needs to be tempered with a commitment to proceed only after proper authorization. When it is not, accidents may result (*e.g.* the scaffolding collapse, chain hoist failure, *etc.*)

Section 4 - Five Core Functions (CF)

Just as the seven guiding principles underpin JLab work, the five core functions describe the way work is actually done. As with the guiding principles, examples are cited to show how the core functions are implemented at JLab. We also point out how the implementation of the core functions could be improved.

CF #1 - Define the Scope of Work

Observations

As a single purpose lab the high level scope of work at JLab is easier to set than it would be at a multi-function lab. The Institutional Plan defines the scope of work at this highest level.

On a more day-to-day basis, the scope of work associated with accelerator operations is defined at daily 8:00AM MCC meetings and Wednesday scheduling meetings.

Concerns

While JLab is still a single purpose lab, the growing importance of the FEL and projects like the SNS makes defining the scope of work at the laboratory level more difficult but at the same time

more important in regard to safety. Without a clear definition of the scope of work the difficulty of balancing priorities (Guiding Principle 4) is exacerbated and it becomes more likely that resources needed for safety will not be available.

At a more quotidian level it is important that when events force a rapid change in the scope of work, hazards associated with the new scope be identified and taken into account. A shock accident at JLab occurred when a welding job became an electrical repair job. Perhaps, if the hazards connected with the electrical repair had been reviewed before the repair was initiated, the potentially serious accident could have been prevented. In the ever-changing research environment of JLab, reacting quickly to changing needs while maintaining safety standards it is a significant challenge both for those doing the work and for their management.

CF #2 - Analyze the Hazards

Observations

JLab's Final Safety Assessment Document (FSAD) analyzes the hazards at JLab at the highest level. At a lower level hazards are analyzed in the work order process, which includes a hazard classification. Operational Safety Procedures (OSPs), Temporary Operational Safety Procedures (TOSPs), and Work Permits (such as Confined-Space) all require hazard analysis. These in general work well to identify the hazards involved in work.

Concerns

In spite of recommendations in Independent Assessments that the FSAD be reviewed and updated, it has not been updated since 1994. An update is now underway, but an institutional commitment to keep this document current should be made.

Physics Division's OSPs and TOSPs have not consistently included risk classifications to reflect the hazards both before mitigating measures are applied as well as with those measures in place. A thorough analysis of the hazards would establish both these codes.

CF #3 - Develop and Implement Hazard Controls

Observations

Again, at the highest level the JLab FSAD establishes the mitigating measures for the identified hazards. At a lower level the JLab EH&S Manual, training, engineered solutions such as the Personnel Safety System, and personal protective equipment are all important factors in controlling hazards. The EH&S Manual, by providing clear and uniform safety guidance, is critical to controlling hazards at JLab.

The "stop work" authority given to each JLab employee helps ensure safety of operations even in situations where the usual hazard controls may have failed.

Concerns

Training is recognized as a critical component in controlling hazards, but resource constraints have impacted the development of needed training courses. The number of incidents involving electrical hazards suggests that additional training in electrical safety would benefit the Lab. The EH&S Training Subcommittee recognizes that need, but progress has been slow because the JLab subject matter experts are not available to help develop the course.

CF #4 - Perform Work Within Controls

Observations

Division EH&S walk-throughs, local safety wardens and hall work coordinators help line management ensure that work is performed within established controls. Because of the experimental readiness review process established within the Physics Division experiments work within controls. The Radiation Control assisted by Assigned Radiation Monitors (ARMs) help ensure that radiological work is performed within the controls established to maintain JLab's "As Low As Reasonably Achievable" (ALARA) personnel radiation exposure policy.

CF #5 - Provide Feedback and Continuous Improvement

Observations

Numerous mechanisms are in place to facilitate feedback and continuous improvement. A "Lessons Learned" web page captures both JLab Lessons Learned and those from other sites. Lessons with particular relevance to staff are distributed by email.

The EH&S Committee and its monthly minutes are another opportunity to share information. Each year the Physics Division summarizes and analyzes its EH&S inspection results.

The Independent Assessment program focuses on EH&S issues in the organizational elements assessed, and the Line Self-Assessments and Annual Personal Self-Assessments contain an EH&S component.

Concerns

Although there are many avenues for feedback that should lead to improvement, it is not clear that improvement is taking place consistently in the EH&S arena. In fact, the Lab's EH&S performance metrics indicate that JLab's safety record is deteriorating. The metrics are based on the statistics of small numbers and may therefore misrepresent the situation. Still, if any trend exists, it appears to be in the wrong direction. In some cases lessons are not being learned: accidents repeat themselves, data are collected and not analyzed, data rather than information is reported to management. Even some corrective actions stemming from injuries are not promptly taken.

Of all the ISM areas at JLab this seems the weakest.

Section 5 - Recommendations

Reports like this one frequently generate a laundry list of recommendations that accomplish little. In some cases the recommendations are ignored. In others they are accepted, but lead to actions that, while seeming to satisfy the recommendations, produce no lasting improvement.

In the hope of producing more than another such laundry list we have tried to make the recommendations in this section Specific, Measurable, Attainable, Relevant, and Timely (SMART). We have also kept the list short; there are only five recommendations: four principally address Core Function #5: Improve Feedback and Continuous Improvement; and one addresses the Guiding Principle #4: Balance Priorities

Because ISM is so firmly embedded in the way JLab does business and because it works well most of the time, it is perhaps not surprising that continuous improvement is the focus of our recommendations. Following each recommendation is a short discussion of specific actions for implementation.

CF #5 - Improve Feedback and Continuous Improvement

1. Respond to all recommendations (not just those in this report) within two weeks.

> *If feedback is to lead to improvement, recommendations for improvement must be addressed. Whether the recommendations originate in the Site Overlay Report, an Independent Assessment, a peer review or some other source, they should be addressed promptly. If the recommendation is not going to be followed, that should also be documented and reasons given. If the recommendation is going to be pursued, the response should include the action proposed, the person responsible, and a date by which the action will be complete. Note that the proposed action may be anything from a corrective plan to a deadline for the completion of such a plan.*

2. Complete corrective actions on time.

> *Without corrective actions consistent improvement will not occur. The goal should be to complete corrective actions on time, but when shifting priorities make this impossible and a date is missed, a new plan with new dates should be created. Whether or not the new plan is communicated to others would depend on whether the original commitment was made to others. The critical thing is that the corrective actions be completed in a timely manner so that the desired improvement takes place.*

3. Raise the visibility of safety at JLab by:

- Using charts in high-traffic areas to remind people of the number of accident-free days, to compare the safety record this year to last, *etc*.
- Publicizing accidents and near misses (omitting personal information of course).
- Increasing the number of "lessons learned" perhaps by including "mini-lessons."
- Making safety pages more visible on the JLab insider web site.

- Including words like "perform work in a safe manner in accordance with JLab policy" (general employment) and "Create and maintain a safety culture in ….." (management positions) on all JLab vacancy notices.

  The tools and procedures for working safely are in place at JLab. Many of our accidents and near misses seem to result from carelessness or inattention. Keeping safety "front and center" in everyone's mind may reduce these. Progress has been made in "publicizing" safety (e.g. the Lessons Learned web page, contributions to Swapan's Musings and On Target) but more can be done.

4. Make better use of EH&S inspection results by:

- Analyzing and trending the data at least annually.
- Reporting the periodic inspection results to management, safety wardens, and workers in a form that communicates the overall safety status of the workplace as well as noting EH&S deficiencies.

  Because so much effort is spent making inspections and collecting data, it makes sense to maximize the return on this investment. Analyzing and trending data at least annually can point to systemic issues that need to be addressed. A list of EH&S deficiencies may be useful to the manager of a work space, but a narrative that draws an overview from that list is likely to be more useful.

GP #4 - Balance Priorities

5. Improve the ability of subject matter experts to contribute to safety at JLab by:

- Including authorship of EH&S Manual chapters, participation on EH&S committees, *etc*. as performance expectations for all staff who have these responsibilities.
- Amending EH&S subcommittees charters to encourage proactive efforts when appropriate.
- Allowing subcommittees to report their results to Director's Council annually.

  Because many EH&S subject matter experts belong to line rather than EH&S organizations, they have to balance line responsibilities against their EH&S efforts. Including EH&S work in their performance expectations would ensure that these experts get the proper "credit" for their safety work.

  The EH&S subcommittees are operating in a reactive mode - they respond to questions and address issues that are directed to them. This is valuable, but being proactive could add more value. The Electrical Safety Subcommittee could, for instance, take an active role in developing a needed electrical safety-training course. Allowing direct reporting of subcommittee results to Director's Council could encourage this sort of work by raising its visibility.

Appendix A:
Seven Guiding Principles

1. **Line Management Responsibility for Safety**
   Line management is directly responsible for the protection of the public, the workers, and the environment. As a complement to line management, the Department's Office of Environment, Safety and Health provides safety policy, enforcement, and independent oversight functions.

2. **Clear Roles and Responsibilities**
   Clear and unambiguous lines of authority and responsibility for ensuring safety shall be established and maintained at all organized levels within the Department and it contractors.

3. **Competence Commensurate with Responsibilities**
   Personnel shall possess the experience, knowledge, skills, and abilities that are necessary their responsibilities.

4. **Balanced Priorities**
   Resources shall be effectively allocated to address safety, programmatic, and operational considerations. Protecting the public, the workers, and the environment shall be a priority whenever activities are planned and performed.

5. **Identification of Safety Standards and Requirements**
   Before work is performed, the associated hazards shall be evaluated and an agreed-upon set of safety standards and requirements shall be established which, if properly implemented, will provide adequate assurance that the public, the workers, and the environment are protected from adverse consequences.

6. **Hazard Controls Tailored to Work Being Performed**
   Administrative and engineering controls to prevent and mitigate hazards shall be tailored to the work being performed and associated hazards.

7. **Operations Authorization**
   The conditions and requirements to be satisfied for operations to be initiated and conducted shall be clearly established and agreed-upon.

Appendix B:
Five Core Functions

1. **Define the Scope of Work**
   Missions are translated into work, expectations are set, tasks are identified and prioritized, and resources are allocated.

2. **Analyze the Hazards**
   Hazards associated with the work are identified, analyzed, and categorized.

3. **Develop and Implement Hazard Controls**
   Applicable standards and requirements are identified and agreed-upon, controls to prevent/mitigate hazards are identified, the safety envelope is established, and controls are implemented.

4. **Perform Work Within Controls**
   Readiness is confirmed and work is performed safely.

5. **Provide Feedback and Continuous Improvement**
   Feedback information on the adequacy of controls is gathered, opportunities for improving the definition and planning of work are identified and implemented, line and independent oversight is conducted, and, if necessary, regulatory enforcement actions occur.

Appendix C:
Documents Reviewed

ISMS Verification (May 1999)
Validation of the TJNAF ISMS (November 1999)
ISMS Plan (September 2001)
EH&S Manual
QA Plan Manual
CY2000 Line Self-Assessments
CY2001 Line Self-Assessments
CY2000 Accident/Incident Reports
CY2001 Accident/Incident Reports
CY2002 Accident/Incident Reports
Radiation Safety Deviation Reports
Independent Assessments
CY2000 Occurrence Reports
CY2001 Occurrence Reports
CY2002 Occurrence Reports
Internal Lessons Learned
SA/QA Data Bases
Accident Reports
Lockout/Tagout Reports
Final Safety Assessment Document
JEHSC Meeting minutes and Highlights

Appendix D:
Memorandum of Concurrence

MEMORANDUM

To: James J. Murphy, Hugh Williams, Carter Ficklen, Mary Jo Bailey

From: Christoph W. Leemann

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Comment: The EH&S Officers of each divisions will submit semiannual analyses of their EH&S inspection results to the Director for inclusion in his monthly safety letter to Dr. Ray Orbach, DOE Office of Science.

Recommendation: Improve the ability of subject matter experts to contribute to safety at Jefferson Lab.

Comment: Three initiatives will be undertaken in this area: (1) Supervisors of all staff with EH&S responsibilities (EH&S Manual chapter authors, EH&S committee members, safety wardens, *etc.*) will include in the performance expectations of those staff objectives that reflect their EH&S responsibilities. (2) EH&S subcommittee charters will be amended to encourage the subcommittees to act proactively. (3) All EH&S subcommittees will be invited to report annually to Director's Council on their accomplishments.

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